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PERRY + CURRIER INC. 1300 YONGE STREET SUITE 500 TORONTO, ONTARIO M4T-1X3 CANADA			WILLIAMS, PATRICK C	
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte RICHARD HAIGHT and PETER PAVLIN

Appeal 2020-000691
Application 14/736,873
Technology Center 3700

Before JOHN C. KERINS, CARL M. DEFRANCO, and
GEORGE R. HOSKINS, *Administrative Patent Judges*.

DEFRANCO, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant¹ appeals from the Examiner's decision to reject claims 1, 7–14, and 16–20. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ We use the word “Appellant” to refer to “applicant” as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Weir Canada, Inc. Appeal Br. 2.

CLAIMED SUBJECT MATTER

Of the claims on appeal, claims 1 and 19 are independent. Claim 1 is directed to a “pump system” that includes a “discharge pipe” coupled between the shore of a body of fluid and an off-shore pump support. Claim 19 is directed to the discharge pipe itself. As claimed, the discharge pipe includes: (1) “a body” that extends along a “longitudinal axis” between a first end and a second end; and (2) “an expansion member” connected to the body that “deviat[es] . . . horizontally from the longitudinal axis.” The expansion member includes “a first segment,” “a second segment,” and “a third segment,” with the first and third segments being “perpendicular to the longitudinal axis in a neutral position” and the second segment being “parallel to the longitudinal axis in the neutral position.” Notably, the first and third segments are made of a different material than the second segment, with the second segment “having a greater flexibility” than the first and third segments.

Claim 19, reproduced below, is illustrative.

19. A discharge pipe for a pump system for use in a body of fluid, the discharge pipe comprising:

a first end configured for coupling to a pump support of the pump system;

a second end configured for coupling in a fixed relationship with a shore of the body of fluid;

a plurality of segments extending between the first and second ends and configured for support along a surface of the body of fluid; the plurality of segments defining:

a body defining a longitudinal axis traversing the first end and the second end, and the body having at least one body segment of a first material;

an expansion member connected to the body and deviating substantially horizontally from the longitudinal axis; the expansion member having:

a first segment of the first material perpendicular to the longitudinal axis in a neutral position;

between the first segment and the second end, *a second segment of a second material parallel to the longitudinal axis in the neutral position, the second segment having a greater flexibility than the first segment;* and

a third segment of the first material connected to the body between the second segment and the second end, the third segment being perpendicular to the longitudinal axis in the neutral position;

the plurality of segments configured for accommodating lateral forces applied to the pump system substantially parallel to the surface of the body of fluid by transitioning the expansion member between an expanded position for increasing a distance between the first and second ends and a collapsed position for reducing the distance between the first and second ends.

Claims App. 15–16 (emphasis added).

EVIDENCE OF RECORD

The Examiner relied on the following prior art:

Name	Reference	Date
Gassett	US 3,765,463	Oct. 16, 1973
Smith	US 4,907,912	Mar. 13, 1990
Brunnhofer	US 5,476,080	Dec. 19, 1995
Pollack	US 7,080,673 B2	Jul. 25, 2006
Williams	US 2004/0007278 A1	Jan. 15, 2004

EXAMINER'S REJECTIONS

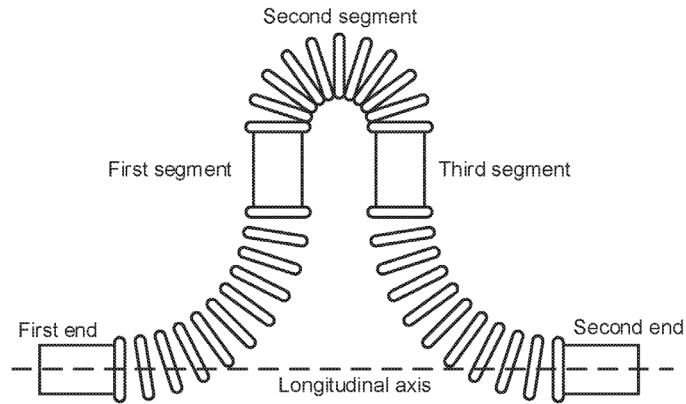
Appellant appeals from the Examiner's Final Office Action of December 28, 2018, which includes the following rejections:

Claims Rejected	35 U.S.C. §	Basis
19	103	Williams
19, 20	103	Gassett, Williams, and Pollack
1, 7–14, 16, 18	103	Gassett, Williams, Pollack, and Smith
17	103	Gassett, Williams, Pollack, Smith, and Brunnhofer

ANALYSIS

A. Independent Claim 19

Appellant begins by arguing independent claim 19, which is directed to the “discharge pipe” alone. *See* Appeal Br. 5–8. In particular, Appellant argues that claim 19 is allowable over Williams because the central-most flexible segment of Williams’ pipe is only capable of a “U-shaped” configuration, which fails to meet the “parallel to the longitudinal axis” limitation required by claim 19. *Id.* at 6–7. In support, Appellant provides an annotated depiction, reproduced below, of what it purports to be the U-shaped configuration of Williams’ conduit. *Id.*



Appellant's Annotated Depiction of Williams' Conduit

We disagree with Appellant. We do not read Williams as limiting the length and radius of curvature of the corrugated central segment in the manner depicted by Appellant's illustration. Rather, we agree with the Examiner that a skilled artisan would have fully understood that Williams' corrugated flexible segments are capable of having a longer dimension in the longitudinal direction than that depicted by Appellant. *See* Exr. Ans. 15. As described, Williams' conduit is "integrally formed" of an alternating series of "tubular, flexible corrugated" segments 130 and "relatively rigid, tubular, non-corrugated" segments 110, 112, 114. Williams ¶¶ 22–23, Fig. 4. By having corrugated flexible segments, Williams' conduit is "adapted to bend" while maintaining its structural integrity (i.e., "burst pressure"). *See id.* ¶¶ 29–30, Fig. 3; *see also id.* ¶ 32, Fig. 5 ("to form sharper bends without overstressing the conduit assembly").

Moreover, the corrugated flexible segments of Williams' conduit may be configured in a straight and elongated fashion (Fig. 4) or in an elbow-like fashion, i.e., "at an angle of at least 90 degrees relative to straight" (Figs. 3, 5). *Id.* ¶ 30. Indeed, the conduit shown in Williams' Figure 4 is capable of being configured such that the central-most corrugated segment has an

elongated, straight configuration, while the adjacent corrugated segments (i.e., immediately to the left and right of the central segment) have an elbow-shaped configuration that results in rigid segments 112, 114 (i.e., at distal ends of the corrugated segments on opposite sides of the central-most corrugated segment) being perpendicular to the central-most corrugated segment. In addition, the outer-most corrugated segments in Williams' Figure 4 are capable of having reverse-elbow configurations such that the outer-most rigid segments (i.e., the supply and discharge ends of the integrally-formed conduit 10) are disposed along a longitudinal axis that is parallel with the central-most corrugated segment. Thus, we reject Appellant's assertion that Williams' central-most corrugated segment (i.e., "Second segment" in Appellant's annotated depiction) is incapable of having an elongated dimension that is parallel with the longitudinal axis on which the supply and discharge ends are disposed when Williams' conduit is formed into a U-shaped configuration.

The record also supports the Examiner's finding that a skilled artisan would have considered the U-shaped configuration of Williams' conduit to be an "engineering expedient" because bending or manipulating a pipe to accommodate positioning of its supply and discharge ends is within the routine level of skill in the art. Exr. Ans. 5. Appellant argues that a change in shape or configuration can only be considered an engineering expedient "in the absence of persuasive evidence that the particular configuration of the claimed container was significant." Appeal Br. 7 (citing MPEP 2144.04 § IV.B) (emphasis omitted). According to Appellant, "the claimed configuration *is in fact significant*" because it "enables the discharge pipe to accommodate lateral forces resulting from movement between the first and

second ends” and is “not merely to route [the pipe] around obstacles . . . between the ends, or to accommodate bends between the ends.” *Id.* at 7–8. Appellant continues that “Williams does not contemplate a scenario in which the ends to which the pipe is connected move relative to one another.” *Id.* at 8.

We do not find Appellant’s argument persuasive. Claim 19 merely states the intended purpose of the flexible segments is “for accommodating lateral forces” in the event of displacement between the ends of the pipe. That statement of intended purpose, however, does not distinguish over Williams’s conduit, which is equally capable of accommodating lateral forces that may result from bending or manipulation of the conduit between its two ends. Indeed, as discussed above, the very purpose of Williams’ corrugated segments is to allow the conduit to bend without sacrificing its structural integrity. *See* Williams ¶ 30 (“the corrugated section 130 is preferably adapted to bend at an angle of at least 90 degrees relative to straight while maintaining a burst pressure of at least 630 psi at 73° F”); *see also id.* ¶ 32 (“Conduit systems according to the present invention may be formed using conduit assemblies consisting of greater than two conduits 100, for example, to form sharper bends without overstressing the conduit assembly.”). Accordingly, we are persuaded that the record evidence supports the Examiner’s findings that Williams teaches a pipe capable of accommodating lateral forces and being configured in the manner recited by claim 19. Having considered Appellant’s arguments, we sustain the Examiner’s rejection of claim 19 as unpatentable over Williams.

B. Claims 19 and 20

Appellant argues that claims 19 and 20 are allowable over the Examiner's asserted combination of Gasset, Williams, and Smith because none of those references discloses the expansion member limitations "reproduced above in connection with the rejection of claim 19 in view of Williams alone." Appeal Br. 8–9. As discussed above, we agree with the Examiner that Williams teaches an expansion member in the manner claimed. Thus, we are unpersuaded by Appellant's argument in this regard.

Appellant also faults the Examiner's reason for modifying Gasset to incorporate Williams' pipe—"to provide a pipe that still accommodates sudden displacements of forces but additionally provides resistance to knotting, necking and twisting." *Id.* at 9 (citing Final Act. 6). According to Appellant, the Examiner's reason is "insufficient" because Gasset's flexible hose 62 "is at least as accommodating of displacements as and forces as the conduits of Williams, *if not more so.*" *Id.* (emphasis added).

We disagree with Appellant that the Examiner does not advance a sufficient reason for combining Gasset and Williams. It is precisely because Gasset's hose 62 is so flexible and floppy that it is more prone to kinking, necking, and knotting than Williams' semi-rigid pipe. Indeed, according to Gasset, cranes 65 are needed "to support the flexible hoses 62 above the water surface to avoid the stresses and resulting wear caused by waves." Gasset, col. 3, ll. 10–14. On the other hand, Williams' pipe is formed of alternating "rigid" and "flexible" segments that provide some structural support to the pipe while also giving it a "modulus of elasticity." Williams ¶¶ 23, 27. That teaching by Williams supports the Examiner's finding that a skilled artisan would have been led to replace Gasset's

kinkable, flexible hose 62 with Williams' semi-rigid pipe in order to provide resistance to kinking, twisting, and knotting while also permitting some flexibility to accommodate lateral forces caused by waves and tides. *See* Exr. Ans. 15–16. Thus, we sustain the Examiner's rejection of claims 19 and 20 as unpatentable over Gasset, Williams, and Smith.

C. Claims 1, 7–14 and 16–18

To refute the rejection of claims 1, 7–14, and 16–18 as unpatentable over Gasset and Williams (as well as additional prior art), Appellant relies on the same arguments it presented for patentability of independent claim 19. Appeal Br. 10–11. As discussed above, we are unpersuaded by Appellant's arguments with respect to claim 19. Thus, we sustain the Examiner's rejection of claims 1, 7–14 and 16–18.

CONCLUSION

The Examiner's rejections are AFFIRMED.

DECISION SUMMARY

Claims Rejected	35 U.S.C. §	References	Affirmed	Reversed
19	103	Williams	19	
19, 20	103	Gasset, Williams, Pollack	19, 20	
1, 7–14, 16, 18	103	Gasset, Williams, Pollack, Smith	1, 7–14, 16, 18	
17	103	Gasset, Williams, Pollack, Smith, Brunhoffer	17	
Overall Outcome			1, 7–14, 16–20	

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TIME PERIOD FOR RESPONSE

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED